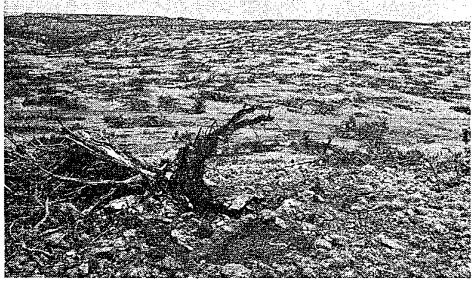
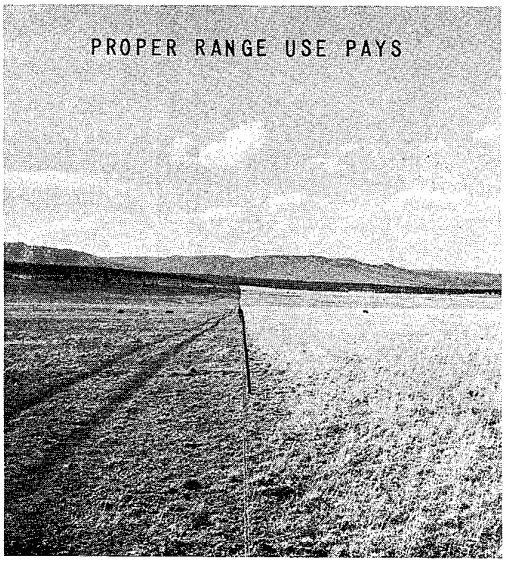
RANGE CONSERVATION - TECHNICAL NOTES

A L CHEMICAL PLANT CONTROL

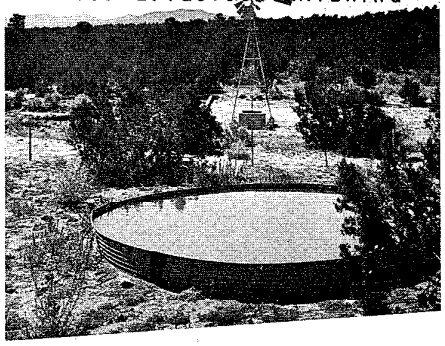
CHAINING PINON JUNIPER



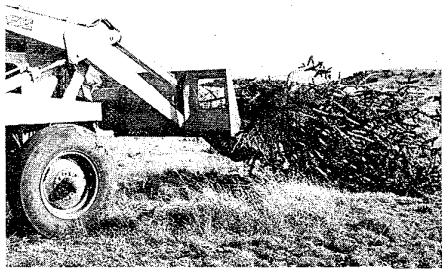


U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
NEW MEXICO

GOOD LIVESTOCK WATERING



CHOLLA CONTROL



RANGE TECHNICAL NOTE NO. 65

RE: Planned Grazing Systems - Evaluation of Short Duration Grazing Systems

This Range Technical Note transmits an evaluation by three state range conservationists in Texas of the short duration grazing systems in operation there.

Please note the planning considerations for design of this type of system before assisting ranchers.

Attachment

AC's - 1 ea.
DC's - 1 ea.
Area Range Conservationists - 1 ea.
Adjoining States - 1 ea.
WTSC, Portland - 2
Director, Plant Sciences Division, SCS, Washington, DC -2

11-64 4-L-19447

Evaluation of Short Duration Grazing Systems by State Range Conservationists

Joe Norris, Alton Wilhite, and Gary Westmoreland

Short duration grazing, commonly referred to as high intensity-low frequency grazing, was first installed in Texas by the Texas Agricultural Experiment Station on its research ranch near Barnhart over 20 years ago. However, it wasn't until the late 1960's that this system was introduced to the commercial ranching industry of Texas. Since that time, these systems have increased in popularity among ranchers throughout the state. In the last five years over 300 ranchers have implemented systems on their ranches.

In an intensified grazing system, livestock are generally grouped into one herd for grazing and are systematically rotated throughout a series of pastures. The number of pastures usually varies from 4 to 12, but the average is about 8. The length of the grazing period for each pasture is based on the amount of forage being produced in that particular pasture. Generally, grazing of a pasture is accomplished in 20-60 days with the complete rotation or grazing cycle being completed in about 5-12 months.

During the last 10 years, there has been a considerable amount of conflicting information circulating throughout the state on the advantages, disadvantages, and problems associated with short duration grazing. Since there has been a very limited amount of research data published on these grazing systems, range scientists of the Soil Conservation Service made an extensive evaluation of existing grazing systems being used across Texas. The following is a resume of their findings:

I. Purposes of short duration grazing systems

   A. Improve the quality and quantity of vegetation

   B. Provide for flexibility in grazing management

   C. Provide for systematic rest periods for each pasture to permit vegetative recovery

   D. Develop a grazing system that will maximize efficiency of vegetative harvest consistent with vegetative production

II. Benefits generally received after two or more years in operation

   A. Rapid change in vegetation; there is an appreciably large increase in the better species

   B. Increase in livestock production per acre

C. Frequently results in greater numbers of livestock being run, particularly after two or more years because there is greater forage production. These increases in livestock numbers have been averaging 25 to 50 percent.

D. Lower operating cost per head of livestock

E. Better breeding efficiency. Most producers reported a small increase (1 to 5 percent) in calf crop; however, the Sonora Experiment Station reported a marked decrease in 1974 on their system.

F. Fewer internal parasites, since in most cases the parasitic reproduction cycle is broken by shorter grazing periods

G. Wildlife habitat is improved.

H. Reduction in labor

I. Provides for flexibility in herd management during drought, since the rancher has a better opportunity to analyze forage on hand versus rate of regrowth in grazed pastures.

J. Provides for maximum flexibility in herd management by moving livestock to permit them to take advantage of special vegetative features such as: short term palatable growth of annuals, above average growth of Texas winter grass, short term availability of field crops, etc.

K. Provides for maximum flexibility in use of all types of crops produced on any given operating unit, be it native grassland, improved pasture, grazing of field crops, or ensilage.

L. Permits easier manipulation of breeding herd for AI operations.

M. Occasionally with large herds less male animals are needed for breeding, since there is less travel time required when breeding herd is bunched.

N. Provides "fresh" forage with each move as well as forage that has not been used before.

O. Creates a condition whereby cattle with less desirable traits can be selected out more easily - i.e., more timid animals, late breeders, etc.

III. Points most frequently cited for short duration grazing systems being abandoned or not implemented

A. Lack of sufficient livestock water

B. Reduced calf weights - up to 30-70 pounds per calf

C. Livestock not adjusting - animal stress resulting in psychological changes

D. Physical features such as corrals, working chutes, etc., are inadequate for working large herds.

E. Increase the chances of infecting the herd with communicable diseases

F. Winter feeding becomes a problem, especially where large numbers are fed cake in one location.

G. Frequent moves invite greater opportunity to dogie young offspring.

H. Increased need to change male animals more frequently during the breeding season

I. Regrowth of desirable browse plants does not appear to be responding adequately following periods of intensive grazing where brush does not make up a very large percentage of the total plant community. Under these conditions longer rests than normal may be needed.

J. Increased difficulty in breeding programs of registered operations, since certain females have to be kept in separate pastures to be bred to certain males.

K. Social problems amoung animals are intensified, such as horned versus mulley cattle, aggressive versus timid animals, etc.

L. Requires a change in traditional methods of operations

M. Lack of adequate or timely technical follow-up assistance by SCS during the first year.

N. Requires an above-average desire by the operator to want to make the system work and be profitable - this generally requires an individual with above average knowledge of livestock and vegetation.

IV. Other points or features to consider in the design and implementation of short duration grazing systems

A. Younger animals adjust more quickly to frequent moves than do older cattle. This is particularly true when older cattle have not been in any kind of a grazing system before. It has been noted that after a full cycle has been made through all pastures, older animals will adjust to the intensified grazing period and more frequent moves.

B. Most ranchers are having to change their winter supplemental feeding program from cubes or cake to more bulky feed such as cottonseed, liquid molasses, blocks or meal to prevent excessive concentrations, especially during wet weather.

C. When moving livestock, it is best to make the moves between adjacent pastures. Gates can be left open permitting animals to work their way into the next pasture. If young animals are by their mothers' sides, sufficient time is allowed for the mother to move the offspring reducing loss of offspring or chance to dogie. Up to four days may be required for this purpose before gates are closed. Moves between pastures that do not join should be made with dry animals where possible.

D. Climate plays a big part in determining length of grazing and rest periods needed. There is no doubt that in a higher rainfall area quality of forage declines at a much faster rate than in dryer portions of the state. Thus, grazing and rest periods will be shorter. It should also be noted that tall grasses improve faster in pastures receiving rest periods up to six months.

E. Though there are several one herd systems with livestock numbers ranging up to 700 animal units, it appears most operations can handle 300 animal units or less more efficiently.

F. Points ranchers use in judging when to move livestock are:

1. Degree of use on key species and percent of key plants receiving use

2. Cows that have been through the system one full cycle will indicate their desire to move by such actions as grazing later in the day, crowding fences, milling, congregating at the gate, etc.

3. Overall condition of forage in the pasture to be grazed

4. Amount of forage available over the entire ranch as well as current climatic conditions

5. Degree of use of entire vegetative composition of the pasture - it is advisable to use dry animals in obtaining a greater degree of use throughout a pasture or a greater use of the less desirable species.

6. Time of the year the pasture is grazed coupled with the type of forage being produced - frequently in Texas wintergrass pasture can be grazed a bit longer in a wet fall or spring than during a hot July or August.

7. Short duration grazing systems will not work under overstocking conditions. It is best to initiate a system with a pasture or series of pastures that have either been rested or that contain "extra" forage.

8. There is strong indication that even accomplished ranchers and range scientists may consider grazing pastures longer than they had planned simply by the amount of forage remaining. This is particularly true when trying to obtain greater distribution or uniform use of vegetation. After a system has been in effect for two or more years, forage production will be noticeably greater. Consequently, the amount of forage that should be left in a grazed pasture will be greater; thus distorting the rancher's opinion of when to move. This will result in heavier than desired use and will tend to stress livestock. It is not advisable to plan for use in excess of 50% of the annual growth by weight of the key forage species.

9. All short duration grazing systems are designed on the basis of forage production and needs of the plants for protection and improvement. The length of grazing period for each pasture is planned on a calendar basis. Although the length of grazing is based on a calendar period, the length of grazing should be varied in order to obtain the planned utilization for each pasture. However, if the length of grazing is continuously longer or shorter than that planned, then adjustment should be made in stocking rate.

G. As a general rule of thumb, if the desired degree of use cannot be accomplished in a maximum of 45 to 60 days, there are insufficient numbers of livestock.

H. Occasionally, ranchers will split their herd to accomplish a purpose. Generally, this is compatible if the total length of grazing period does not exceed the desired degree of use. Complications might arise since the first group of stock will

have preferential forage. An example of this is when sheep and cattle are run in the same system, where first calf heifers are run ahead of wet cows in the system, or when dry cows are run behind the main herd of wet cows.

I. Anytime livestock are bunched and grazing is intensified, problems are more apt to occur. Ranchers and range scientists must be on the alert for impending trouble and closely analyze progress. This is particularly true for the first year or so after the system has been started.

J. Should a registered livestock operation be used in a short duration grazing system during the breeding season, animals can be separated into a given number of pastures permitting specific male animals to be placed with a specific herd of females. At the end of the breeding season, the systematic rotation can once again be implemented preferably in one of the remaining rested pastures.

K. It is desirable to leave a certain amount of available forage in a pasture at the end of the grazing period. This is particularly true when the pasture is planned for use before an adequate amount of rest can be applied prior to the next major growing season. In most instances, the species receiving the greatest grazing pressure during a particular grazing season will not be the same species during the next grazing period. In other words, grazing preference will change from season to season.

L. Sometimes more labor will be needed to work livestock during times of marking and marketing. Ranchers simply are not accustomed to working a large number of livestock at any given time - particularly if they don't have adequate facilities.

M. By all means the land user (operator) installing such systems must be in on the original development and design of the system. He must understand the "whys" of the system. His intimate knowledge of the ranch, pasture lay-out, past history, expected vegetative responses, etc., are valuable in the design and implementation process.

This report was reviewed with personnel of the Texas A&M University Extension Service and Texas Experiment Station. Their comments were incorporated into this report.